

**REMARKS**

Claims 1-12 are pending in this application. By this amendment claim 1 is amended to place the period after the formulas and claim 12 is added. Support for new claim 12 can be found, for example, at page 1, lines 8-9, page 17, lines 7-8, and Example 1, of the originally filed specification. No new matter is added.

**I. Claim Rejections Under 35 U.S.C. §103**

**A. Taniguchi**

The Office Action rejects claims 1-11 under 35 U.S.C. §103(a) as being unpatentable over Taniguchi et al. (U.S. Patent No. 7,033,675, "Taniguchi"). Applicant respectfully traverses the rejection.

The Office Action acknowledges that JP '436 does not specifically teach that the PEI resin is a mixture of 30/70 to 70/30 of A-1/A-2. Nevertheless, the Office Action asserts that one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum amounts of the two PEI resins to utilize. Applicant respectfully disagrees.

One of ordinary skill in the art at the time the invention was made would not have been motivated to prepare a film comprising (A-1) and (A-2) having a weight ratio, (A-1)/(A-2), ranges from 70/30 to 30/70, as claimed in claim 1. Taniguchi teaches to select the para-substituted polyimide resin of the formula (2) over the meta-substituted polyimide resin of the formula (3). See Taniguchi at col. 4, lines 27 - 36. In Taniguchi, PEI-1 is represented by the formula (2), and PEI-2 is represented by the formula (3).

Moreover, Taniguchi's Examples 1-3 contain PEI-1 and show significantly higher edge tearing resistance over Comparative Examples 1-3, which contain PEI-2. See Taniguchi at col. 10, lines 5 and 44-46, and col. 11, Table 1. Thus, Taniguchi guides one of ordinary skill in the art to select the para-substituted polyimide resin of the formula (2) over the meta-

substituted polyimide resin of the formula (3), rather than a 70/30 to 30/70 mixture of formula (1) and formula (2) of claim 1. Accordingly, one of ordinary skill in the art at the time the invention was made would not have prepared a film comprising (A-1) and (A-2) having a weight ratio, (A-1)/(A-2), that ranges from 70/30 to 30/70, as claimed in claim 1.

Accordingly, claim 1 would not have been rendered obvious by Taniguchi. Claims 2-12 variously depend from claim 1 and, thus, also would not have been rendered obvious by Taniguchi. Reconsideration and withdrawal of the rejection are respectfully requested.

**B. JP 2002-144436**

The Office Action rejects claims 1-11 under 35 U.S.C. §103(a) as being unpatentable over JP 2002-144436 ("JP '436"). Applicant respectfully traverses the rejection.

The Office Action acknowledges that JP '436 does not specifically teach that the PEI resin is a mixture of 30/70 to 70/30 of A-1/A-2. Nevertheless, the Office Action asserts that one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum amounts of the two PEI resins to utilize. Applicant respectfully disagrees.

One of ordinary skill in the art at the time the invention was made would not have been motivated to optimize a film comprising (A-1) and (A-2) having a weight ratio, (A-1)/(A-2), that ranges from 70/30 to 30/70 from JP '436, because the purpose of JP '436 is to bond a molded article of a heat resistant resin mixture of a polyetherimide and polyaryletherone strongly to a metal body, while suppressing flow-out of the resin mixture. See JP '436 at paragraph [0003]. Thus, a person of ordinary skill in the art would have optimized a mixing ratio of the two PEI resins to obtain a strong bond to a metal. The bond between the resin mixture and the metal body is evaluated by bonding strength measured according to JIS C6481. See JP '436 at paragraph [0022]. The measured bonding strength is shown in Table 1 of JP '436, an English-language translation of which is shown below:

Table 1

	Examples					Comparative Examples			
	1	2	3	4	5	1	2	3	4
P E E K (parts by weight)	40	40	30	30	40	100	100	40	60
P E I (parts by weight)	60	60	70	70	60			60	40
Mica (parts by weight)					30				
Press temperature (°C)	330	330	330	310	330	330	350	350	330
Metal	Cu	Al	Cu	Cu	Cu	Cu	Cu	Cu	Cu
Extrapolated onset temperature of melting (°C)	311.9	311.9	308.9	308.9	311.8	326.1	326.1	311.9	314.2
Bonding strength (N/mm)	⊙ 1.3	○ 1.0	⊙ 1.6	○ 1.0	⊙ 1.2	× peeled	⊙ 1.7	⊙ 1.5	× 0.3
Flow-out (%)	○ 0.68	○ 0.68	○ 0.85	⊙ 0.35	⊙ 0.49	○ 0.18	△ 2.2	× 11.3	○ 0.59
Overall rating	○	○	○	○	○	×	△	×	×

On the other hand, in the claimed invention the bonding strength of Comparative Example 2, having a mixing ratio (PEI-1/PEI-2) of 10/40, and Comparative Example 3, having a mixing ratio of 0/50, is slightly better than that of Example 1. See specification at p. 16, Table 1, Example 1, Comparative Example 2 and Comparative Example 3. Thus, if a skilled artisan had optimized the mixing ratio based on the teachings of JP '436, then the mixing ratios of 10/40 and 0/50 would have been selected over 30/20 of Example 1 of the claimed invention.

Moreover, as Table 1 on page 16 of the specification shows, Example 1 has significantly higher edge tearing strength in both longitudinal and traversal directions. Because JP '436 does not disclose, teach or suggest the edge tearing strength of a film, a skilled artisan would not have produced the mixing ratio of the two PEI resins of the claimed invention based on the teachings of JP '436.

Further, the film of the claimed invention can be heat bonded at a temperature of 260°C or lower. The press temperature is a temperature employed to prepare a multilayered board. See specification at page 15, line 3. Such an advantage could not have been expected from JP '436, because JP '436 teaches to heat bond at a temperature that is higher than the beginning flow temperature of polyetherimide ( $T_A$ ). See JP '436 translated Table 1 (above)

and paragraph [0024], showing the press temperature is at least 310 °C with T<sub>A</sub> being 272.2 °C. Thus, one of ordinary skill in the art would not have looked to JP '436 in order to produce the film of claim 1, because JP '436 teaches to heat bond at a temperature higher than the temperature of the resins of claim 1.

As JP '436 teaches one of ordinary skill in the art to optimize a mixing ratio of the two PEI resins to obtain a strong bond to a metal, does not teach edge tearing strength, and does not disclose heat bonding at a temperature of 260°C or lower, one of ordinary skill in the art would not have been motivated to utilize routine experimentation in order to determine the optimum amounts of the two PEI resins to utilize. Thus, claim 1 would not have been rendered obvious by JP '436. Claims 2-12 variously depend from claim 1 and, thus, also would not have been rendered obvious by JP '436. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

## **II. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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